

Work Order ID 148495

Monday, July 04, 2016 7:51:41 AM

148495

Page 1

Item ID: D5320-7

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Spacer

Start Date: 7/8/2016 Start Qty: 60.00

60

Cust Item ID:

Required Date: 7/15/2016 Req'd Qty: 60.00

60

Customer:

Reference:

DAS

Approvals:

Process Plan:

21

9-89

Date: JUL 0 5 2016

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D5320

B

100

0.01

100

Doosan

Doosan Lathe

FLOW WATER JET

Memo

1-TURN as per Dwg

Dwg Rev: B

Prog Rev: B

2-Deburr if necessary

0.20

72

φ

DAS

45

9-89

2016-7-21

110

0.00

110

QC

Quality Control

QC2- Inspect parts off machine FAI/FAIB

Memo

0.10

72

φ

DAS

45

9-89

2016-7-21

120

0.00

120

QC

Quality Control

QC8- Inspect parts - second check

Memo

0.20

72

φ

DAS

49

9-89

16/07/2

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
							Completed By		
							Lead hand / Supervisor Approval Verification		
							QC / QA Coordinator Approval		

Root Cause			FAULT CATEGORY							
Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong
Design	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance
Equip/Tooling	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect
Handling/Pre	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing
Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish
LOA	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread
Substation	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence
Past Expiry Date	☐	Manufacturing Process	☐	OTHER :						
Misidentified	☐	Past Due	☐							

Work Order ID 148495

Monday, July 04, 2016 7:51:41 AM

148495

Page 2

Item ID: D5320-7

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N900040100Setup Start ***NS1***

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Item Name: Spacer

Start Date: 7/8/2016 Start Qty: 60.00

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Cust Item ID:

Required Date: 7/15/2016 Req'd Qty: 60.00

60

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

150

Identify as per dwg & Stock Location:

54163

0.00

150

Packaging

Memo

0.10

Packaging

72JUL 25 2016DAS
6
9-89

160

QC21- Final Inspection - Work Order Release

0.00

160

QC

Memo

1.00

Quality Control

DAS
21
9-89JUL 25 2016DAS
21
9-89JUL 25 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
								Completed By	
								Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval					

Root Cause				FAULT CATEGORY			
Environment ☐		No Re-verification ☐		Pressure/Forced ☐		Temperature/Cure ☐	
Design ☐		Operator ☐		Bending ☐		Set-up ☐	
Doc/Data ☐		Offset/Setup ☐		Centre Not Concentric ☐		BOM/Route ☐	
Equip/Tooling ☐		Supplier ☐		Cracks ☐		Broken/Damage/Defect ☐	
Handling/Pre ☐		Training ☐		Crimp/Kink/Ripple/Wave ☐		Inspection Incomplete/Unqualified ☐	
Material ☐		Use for Testing ☐		Cuffs ☐		Contamination ☐	
Internal Transport ☐		Poor Information ☐		Crushing ☐		Countersink ☐	
Tribal Knowledge ☐		Rushing ☐		Heat Treat ☐		Cut Too Short ☐	
LOA ☐		Product Improvement ☐		Wave/Twist in Tube ☐		Instructions Incomplete/Unclear ☐	
Substation ☐		Process Improvement ☐		Marks/Chatter ☐		Drill Holes ☐	
Past Expiry Date ☐		Manufacturing Process ☐		OTHER : _____			
Misidentified ☐		Past Due ☐					

Picklist Print

Monday, July 04, 2016 7:51:45 AM

Page 1

Work Order ID: 148495

148495

Parent Item: D5320-7

D5320-7

Parent Item Name: Spacer

Start Date: 7/8/2016

Required Date: 7/15/2016

Start Qty: 60.00

Required Qty: 60.00

Comments: IPP REV:A 15.10.13 NEW ISSUE DD VERF:JLM IPP
REV:B 16.03.28 AS PER DWG REV.B DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M303R1.250		Purchased			No		f	31.9920		2.778947			

M303R1 250

303 Round Bar 1.250

Location

Loc Qty

Loc Code

MAT028

31.992

106026

3.166

m127864

28.826

3,075 **DAS**
45 2016-721
9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

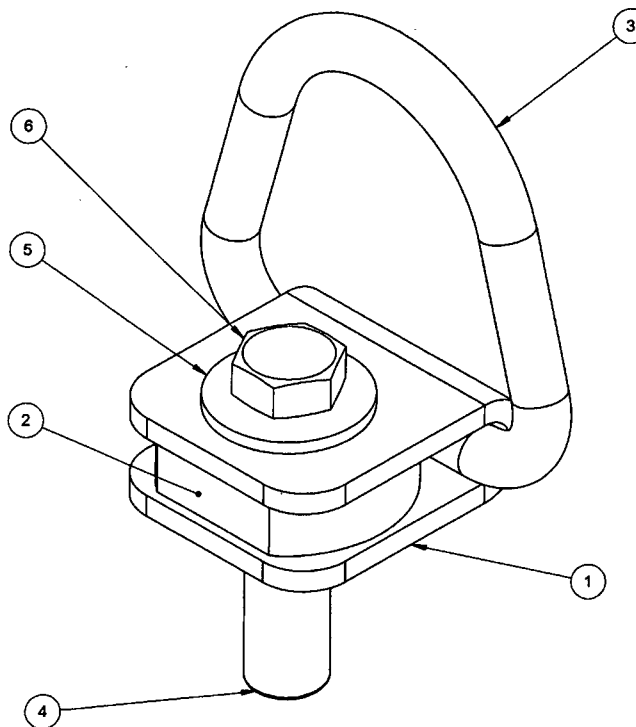
Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	

Root Cause				FAULT CATEGORY			
Environment ☐	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐
Design ☐	☐	Operator	☐	Bending	☐	Set-up	☐
Doc/Data ☐	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐
Equip/Tooling ☐	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐
Handling/Pre ☐	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐
Material ☐	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐
Internal Transport ☐	☐	Poor Information	☐	Crushing	☐	Countersink	☐
Tribal Knowledge ☐	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐
LOA ☐	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐
Substation ☐	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐
Past Expiry Date ☐	☐	Manufacturing Process	☐	OTHER :			
Misidentified ☐	☐	Past Due	☐				

ITEM	QTY	P/N	DESCRIPTION
	X	D5320-043	D RING ASSY
1	1	D5320-5	BRACKET
2	1	D5320-7	SPACER
3	1	D5321-3	RING
4	1	D5362-1	VINYL CAP
5	1	D5405-1	BUSHING
6	1	NAS6604D16	BOLT

△ B



D5320-043 D RING ASSY

STOP COPY
RETURN TO
ENGINEERING
CONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER

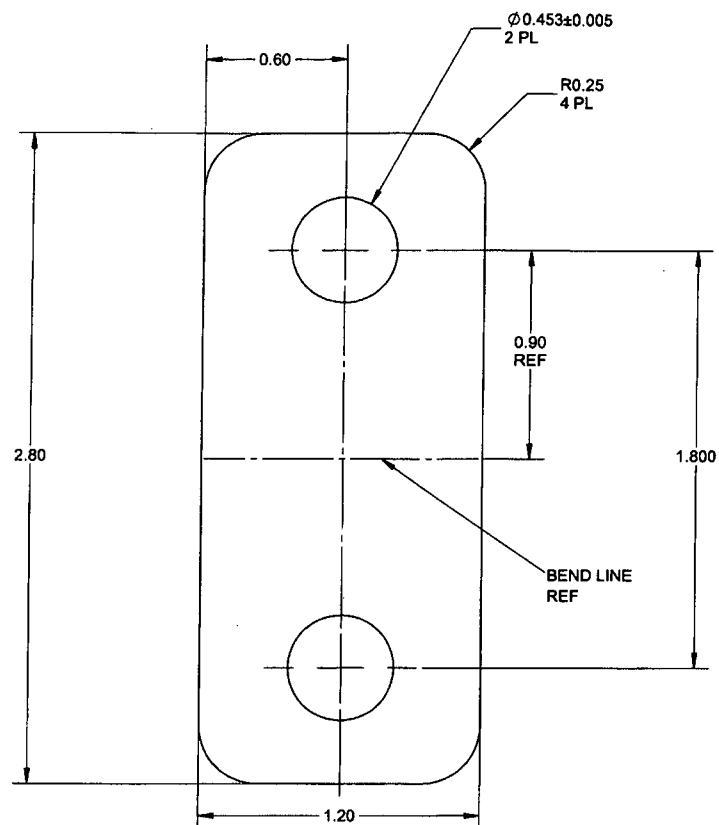
148495 ML5
1607-05

RELEASED
2016-03-23
6216-548

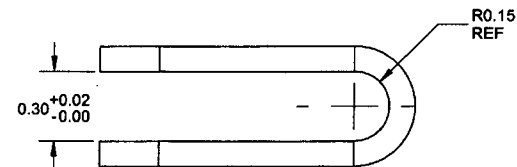
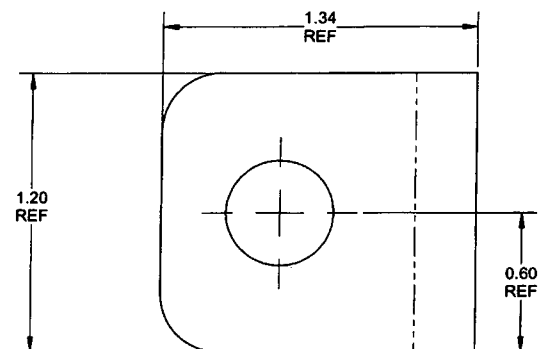
NOTES:
1) MATERIAL: N/A
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: N/A
6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
7) WEIGHT: 0.46 lbs

B	DELETE D5320-041, D5320-1, D5320-3; D5405-1 WAS D2570-3	DB	16.02.08
A	NEW ISSUE	DB	15.10.26
REV.	DESCRIPTION	BY	DATE
DESIGN	DB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	ML		
CHECKED	VS	DRAWING NO.	REV. B
MFG. APPR.	DD	D5320	SHEET 1 OF 3
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	D RING ASSY	NTS
DATE	16.02.08	COPYRIGHT © 2016 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

APPROVED



D5320-5F BRACKET
(FLAT PATTERN)



D5320-5 BRACKET
(MAKE FROM D5320-5F)

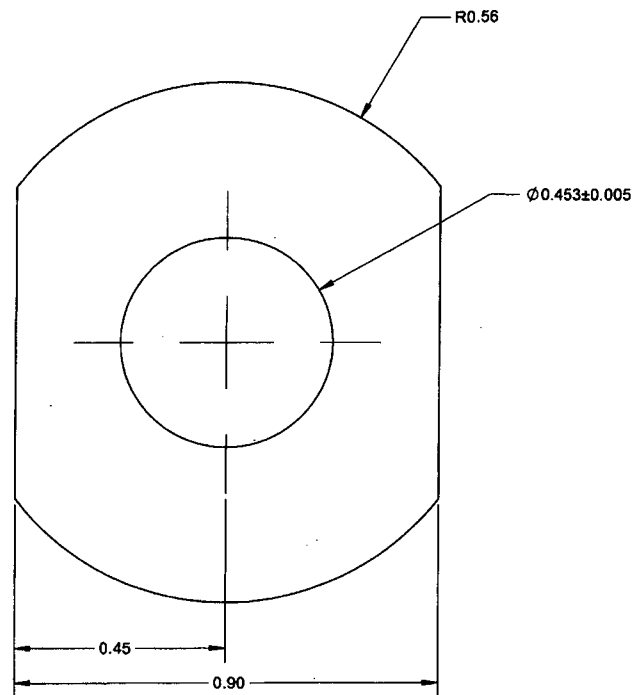
NOTES:

- 1) MATERIAL: AISI 304/316 STAINLESS STEEL PER MIL-S-5059 OR AMS 5513(304) OR AMS 5524(316) OR ASTM A240 OR ASME SA240, 12 GAUGE (0.109), REF. DART SPEC. M304S12GA
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.21 lbs

RELEASED
2016-03-23

APPROVED

DESIGN	DB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	ML		
CHECKED	VS	DRAWING NO.	REV. B
MFG. APPR.	DD	D5320	SHEET 2 OF 3
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	D RING ASSY	NTS
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D5320-7 SPACER

NOTES:

- 1) MATERIAL: AISI 303 ROUND BAR PER ASTM A582
REF DART SPEC M303R
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.06 lbs

APPROVED

DESIGN	DB	DART AEROSPACE LTD	
DRAWN	ML	HAWKESBURY, ONTARIO, CANADA	
CHECKED	VS	DRAWING NO.	REV. B
MFG. APPR.	DD	D5320	SHEET 3 OF 3
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	D RING ASSY	NTS
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RELEASED
2016-03-23